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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/355,254	02/22/00	WAGNER H	C1041/7005

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EXAMINER	
ZARA, J	
ART UNIT	**PAPER NUMBER**
1635	5

DATE MAILED: 06/21/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

File

Office Action Summary

Application No.	Applicant(s)
09/355,254	Wagner et al.
Examiner	**Group Art Unit**
Zara, Jane	1635

☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is clos d** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-23 is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-23 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ NOTICE OF SEQUENCE NON-COMPLIANCE

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claims 1-23 are pending in the instant application.

Specification

On page 18, in the description of figure 5, line 3 of this figure's description, "simulatory" should be replaced with --stimulatory--.

Sequence Compliance

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. See the accompanying Notice to Comply. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Claim Objections

Claims 4-22 are objected to under 37 CFR 1.75@ as being in improper form because of being in multiple dependent form. See MPEP § 608.01(n).

Claim 15, line 3, has "steroides", which should be changed to --steroids--.

Claim 23, line c), has "ore", which should be changed to --or--.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 19-22 read on a method or a use, but, as such, read on improper definitions of processes since no steps are delineated in the claims for the uses, methods or processes claimed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9, 12, 15, 18, 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The metes and bounds of claim 8 are unclear as to what may be considered a "non-toxic derivative" of the polynucleotide comprising the sequence 5'PuPuCGPyC3'.

The metes and bounds of claim 9 are unclear as to what may be considered a derivative of a eukaryotic binding site.

Claim 12 is a dependent claim which is drawn to a method of an independent claim, which independent claim is a product or composition claim with no methods delineated.

Claim 15 reads on a pharmaceutical composition comprising an antigen selected from the group comprising, among others, a "tumor cell". It is unclear how an antigen is selected from a tumor cell. The language of the claim should be changed (i.e.... a tumor cell antigen).

Claim 18 contains the term "treatment of pathogen microorganisms". It is unclear how one might treat a microorganism. The claim language should be modified to treat an infection or condition caused by a pathogen microorganism.

Claims 12 and 19-22 are indefinite because they recite a method or use without any active, positive steps delimiting how this use is actually practiced.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This rejection is based on the revised guidelines for written description, effective as of December, 1999. A review of the specification indicates that elements are not particularly described therein, which elements include *the parts of the sequences* or *a motif of* a transcription factor binding site, or which elements include those *derived from a eukaryotic binding site*, or which describe a *non-toxic derivative of* a polynucleotide, which elements are essential to the

function of the claimed invention. There is no actual reduction to practice of the claimed invention, clear depiction of the claimed invention in the drawings or complete detailed description of such sequences or motifs. Weighing all factors in the view of the level of knowledge and skill in the art, one skilled in the art would not recognize from the disclosure that the applicant was in possession of nucleic acids defining the motifs or essential parts of transcription factor binding sites as claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-6, 9, 11, 12, 16, 17, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Henderson..

Henderson teaches the pharmaceutical compositions comprising an antigen, a polynucleotide which comprises a binding site for a eukaryotic transcription factor and a diluent, which transcription factor has a defined and delineated motif for functionality, and which

composition is used for a vaccine for the treatment of cancer, and which vaccine results in the modulation of an immune response (column 12, line 17-column 14, line 33; column 16, lines 38-64; column 17, line 22-column 18, line 23; column 22, line 12).

Claim 23 is rejected under 35 U.S.C. 102(e) as being anticipated by Watson *et al.*

Watson *et al.* teach a method of identifying a modulator of an immune response comprising a transcription factor binding site and further whereby toxicity is induced (abstract; column 1, line 40-column 2, line 11; column 2, line 21-column 7, line 67). Watson *et al.* further teach the modification of said binding site such that toxicity is not a consequence (column 18, lines 16-37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(a) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8, 10, 13-15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henderson as applied to claims 1-6, 9, 11, 12, 16, 17, 19 and 20 above, and further in view of Davis.

The claims are drawn to a pharmaceutical composition for vaccination against pathogenic microorganisms comprising a polynucleotide which comprises a binding site for a transcription factor for a cytokine and which polynucleotide further comprises the sequence 5'PuPuCGPyC3' and a phosphorothioate internucleoside linkage, and which composition further comprises an antigen selected from the group comprising peptides, polypeptides and proteins.

In addition to the teachings of Henderson which have been applied to the 102 rejection above, Henderson additionally teaches compositions comprising a binding site for a transcription factor which is operably linked to a cytokine (column 6, lines 37-59; column 16, lines 38-64).

Henderson does not teach a eukaryotic binding site for a cytokine transcription factor, nor the inclusion of the polynucleotide sequence 5'PuPuCGPyC3' and a phosphorothioate internucleoside linkage, nor a pharmaceutical composition further comprising an antigen selected from the group comprising peptides or polypeptides or proteins.

Davis teaches compositions and methods of immunization comprising the administration of the polynucleotide 5'PuPuCGPyC3', an adjuvant, and an antigen in polypeptide or protein

form (abstract; column 4, lines 10-39; column 6, line 1-column 8, line 26; column 11, lines 1-37).

It would have been obvious to one of ordinary skill in the art to generate a pharmaceutical composition comprising a polynucleotide which comprises a binding site for a transcription factor, because such constructs had been taught previously in the art by Henderson. One of ordinary skill in the art would have been motivated to generate a polynucleotide construct comprising a gene operably linked to a transcription factor binding site in order to control transcription and expression of the operably linked gene. One of ordinary skill in the art would have been motivated to incorporate an antigen as well as the sequence 5'PuPuCGPyC3' into such a pharmaceutical composition because it had been taught previously by Henderson that an antigen is expressed in a cell specific manner when a polynucleotide sequence encoding it is operably linked to such a binding site, and furthermore the polynucleotide sequence 5'PuPuCGPyC3', alone or combined with a polypeptide encoding an antigen, was taught previously by Davis to immunize a eukaryotic organism against pathogenic microorganisms. One of ordinary skill in the art would have been motivated to include phosphorothioate internucleoside linkages within this polynucleotide because it was taught in the art by Davis and others that the incorporation of this linkage contributes to the stability of oligonucleotides from nucleases. One of ordinary skill in the art would have expected that inducing a cytokine by either incorporating its sequence into a polynucleotide construct whereby its expression is induced by an upstream, operably linked transcription factor binding site, as taught previously by Henderson, or alternatively by placing the immunostimulatory oligonucleotide 5'PuPuCGPyC3' downstream

to an operably linked cytokine transcription factor binding site would modulate or induce an immune response in a recipient organism.

Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Conclusion

Certain papers related to this application may be submitted to Art Unit 1635 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). The official fax telephone numbers for the Group are (703) 308-4242 and (703) 305-3014. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jane Zara** whose telephone number is **(703) 306-5820.** If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. George Elliott, can be reached on (703) 308-4003. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

JZ
June 19, 2000

REMY YUCEL, PH.D
PATENT EXAMINER